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"Approaching An Accessible Community"

A Report of the Ramping Subcommittee

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Regional Advisory Committee for the Physically Disabled
Regional Municipality of Hamilton-Wentworth

December 1990

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Regional Advisory Committee for the Physically Disabled
Regional Municipality of Hamilton-Wentworth

December 1990

This report was prepared by Ada Dixon, Dixon Desktop Publishing, and Marion Emo, Social Planning & Policy Development Division, Regional Social Services, with the enthusiastic assistance of all the members of the Ramping Subcommittee.

Acknowledgements

The Ramping Subcommittee would like to thank the members of the Ramp Survey Team for their energetic and careful work in mapping the ramp situation in the Hamilton-Wentworth Region, July - August 1990.

Mike Burns

Ada Dixon

Pina Schinella

Special thanks to Lindsey George
who fostered the ongoing participatory process
of the Ramping Subcommittee.

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Executive Summary

The Report of the Ramping Subcommittee is a response to problems raised about the use of mobility devices (wheelchairs and scooters) by disabled persons and seniors in the Region. Concerns focused primarily on the accessibility of sidewalks to users of mobility devices. Where curb ramps do not exist, exist only on some and not all corners at an intersection, and where curb ramp design presents a hazard to users, disabled persons and senior citizens find no alternative but to travel on roadways, and frequently use driveways to gain access to sidewalks. This situation is extremely dangerous, both to users of mobility devices and to motorists. The Ramping Subcommittee evolved as a result of these concerns raised during the 1988-1989 term of the Regional Advisory Committee for the Physically Disabled.

The Subcommittee has worked from the principle that all citizens, regardless of their physical ability, should be able to access the community in a safe and independent manner. For disabled persons, including blind and visually impaired persons, access is possible through the application of barrier free design. To this end, the Committee set out to:

- bring together the skills, knowledge and insights of disabled persons, Regional and Municipal staff and concerned citizens to address the issues of accessibility;

- develop design and placement standards for curb ramps in the Region, with attention to the needs of blind and visually impaired persons;

- survey the Region to describe the current status of curb ramps, and

- develop a plan to systematically upgrade streetscape accessibility, and specifically, curb ramping in the Region.

The Ramping Subcommittee has a commitment to redesign and upgrade sidewalks and streetcrossings in the Region. The findings of the field survey of curb ramps indicate not only the extent to which the Region is inaccessible in some areas but also the work yet required to make all the streets and public spaces accessible. The Subcommittee is embarking on Stage 2 of its work, that being to develop and recommend policy to systematically upgrade accessibility throughout the Region. Good design for the disabled is good design for all.

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Section I: Designing Pedestrian Pathways

Introduction

In the recent past there has been a renaissance in the value placed on designing streetscapes to accommodate the needs of pedestrian and vehicular traffic. There has been a shift in thinking towards greater accommodation of the needs of pedestrians with a wide range of characteristics - for example, the young, elderly, disabled, frail, and families with small children. Accessible streetscapes within communities promote independence, self-reliance and the integration of all citizens into community life.

In the fall of 1989, the Regional Advisory Committee for the Physically Disabled in Hamilton-Wentworth struck a subcommittee to address the issues of accessibility related to curb ramping and to systematically assess the need for ramping. The goal was to establish policies for design and placement of curb ramps in the Region. The make up of the Subcommittee was designed to mix the stakeholders in the community; committee members include disabled citizens, representation from the Canadian National Institute for the Blind (CNIB) and the Seniors Council, staff from the Regional Departments of Engineering, Planning, and Social Services and the Traffic Department for the City of Hamilton, and an elected representative or concerned citizen from each of the municipalities.

The purpose of this report is to describe the work of the Ramping Subcommittee to date. Emphasis is placed on the Field Survey of curb ramps in the Region, recommendations for improved access, and future directions for the Subcommittee.

Background

The issue of accessibility arose out of concerns about the many obstacles that disabled persons, seniors and other citizens face in the community. At the outset, concern had been raised as a result of many users of mobility devices travelling on roadways, a situation that is dangerous both for themselves and vehicular traffic. Some of the reasons for these concerns were identified by the Subcommittee in September 1989:

¤ poor placement of ramps forces persons to go into motorized traffic areas or drive against the flow of pedestrian traffic;

¤ users are forced to go long distances to access ramps and their battery time is depleted;

¤ a two inch lip (change of level between ramp and roadway) is dangerous;

¤ ramping is found on one two or three corners at an intersection;

¤ ramping is done inconsistently so that users can get off the sidewalk but are not able to get back on the sidewalk;

- not every new sidewalk is being ramped;
- ramping is not always done where construction is taking place;
- when ramping is planned there is no guarantee that it will be built;
- pedestrian crosswalk markings are not always appropriately placed;
- users of mobility devices encounter obstacles while travelling on sidewalks.

It was also determined that:

- there presently exists no systematic plan for ensuring complete ramping throughout the Region;
- new ramps are created on an ad hoc basis, based on public complaints and recommendations from other Departments;
- there is no clear policy guiding the design and placement standards for ramping, and no policy guiding decision making around ramps, i.e. economic or safety rationale.

On the basis of these observations, the Ramping Subcommittee elected to: a) develop a set of standards for curb ramping design and placement, b) systematically survey the Region to assess community needs for ramping and, c) assess the application of the new design and placement standards where used in the summer of 1990.

Work Plan

It was proposed that the work of the Subcommittee be carried out over a two year period. In order to complete the survey work during good weather in the summertime, the surveying was planned to take place over two summers with a concentration during the first year in the central area and/or high traffic areas in each municipality.

The first year of the Study was developed over four phases.

Phase 1: October 1989 - May 1990

- Development of standards for adequate design and placement of a ramp.
- Definition of core and/or high traffic areas for each municipality for surveying during the first year.

Phase 2: March 1990 - June 1990

- Development of a work plan for the surveyors (i.e. organization of a work plan for each day and transportation arrangements).

Phase 3: June 1990 - August 1990

¤ Field Survey

Phase 4: September 1990 - December 1990

¤ Report to Regional and Municipal Councils

Curb Ramp Design

The Subcommittee developed a set of standards for curb ramp design and placement over a period of eight months (October 1989 - May 1990). Disabled consumers, including blind and visually impaired persons, as well as representatives from the CNIB, have been and continue to be involved in the development and evaluation of the design and placement standards.

The necessity to accommodate the needs of mobility impaired persons as well as blind and visually impaired persons was a challenging task. Design standards to best meet everyone's needs are sometimes in conflict. In addition, engineering principles and construction practices must be considered. Reconciliation of design options was based on cost considerations, maximum accessibility for all disabled persons and consensus. The following are examples of design considerations in the face of different needs.

¤ Grade
The gentle slope or grade of a curb ramp to accommodate persons in wheelchairs and scooters is at odds with the needs of visually impaired persons. The cues for visually impaired persons that they are approaching the end of a sidewalk are a vertical face curb that can be felt with a cane, and/or the colour contrast between road and sidewalk.

¤ Contrast
The application of contrast in streetscape design is extremely helpful for visually impaired persons who often have some residual vision. Hence, the elimination of concrete pathways across roads to ensure contrast between the darker coloured asphalt road and the lighter coloured concrete sidewalk, serves to cue persons they are approaching the road in the absence of vertical curbs.

¤ Lines
Tactile lines follow the pedestrian pathway and direct blind and visually impaired persons along the pathway. Tactile lines cue persons to safely negotiate intersections.

Recommendations for design and placement standards were tabled at the Health and Social Services Committee, Region of Hamilton-Wentworth in June and were circulated to the area municipalities for feedback. All six municipalities have adopted the recommended design and placement standards.

The standards were applied on an experimental basis during the summer of 1990. A considerable degree of co-operation among the Departments of Engineering and Social Services, the Traffic Department (City of Hamilton), and the District Foremen provided a forum for assessment and review of the design and placement standards in practice.

Curb Ramp Design & Placement Standards

a) That ramps be placed at all crosswalk areas, including mid-block road crossings.

b) That ramps provide 4 feet of level access at the curb in each direction within the crosswalk area. (This will enable direct access from sidewalk to sidewalk.)

c) That ramps allow for movement, including a 4 ft. turning radius, within the crosswalk area.

d) That, if space permits, there must be a ramp at each road crossing, one for each travel direction (rather than one wraparound type ramp for access in two directions). This will facilitate access for blind persons.

e) That ramp areas have a tactile application to warn visually impaired and blind persons that they are approaching the road and which provide a physical guide for crossing the roadway such that a person moves in a straight line from sidewalk to sidewalk.

f) That the materials used for sidewalk construction contrast in colour with materials used in crosswalk construction. Colour contrast assists visually impaired persons to distinguish between the sidewalk and roadways areas.

g) That ramps be flush with the street. (There is consensus that water and ice will build up whether or not there is a lip at the curb, therefore not having a lip should not cause additional problems.)

h) That the ramp slope be 1:20 or, where this is not possible, 1:12 with a four foot level for retro-fit construction and a five foot level for new construction. (If these slopes cannot be achieved, and it is desirable to avoid a person having to travel on an angle around a corner and risk tipping, then each site should be assessed on its own merits for alternative solutions including, for example, depressing the entire corner.)

i) That the type and placement of ramps be identified, by the appropriate staff, on construction drawings before tendering.

j) That wheelchair access be established through islands and medians. (Ideally, and certainly with new construction, access should be through the island or median level with the street. This will avoid too dramatic a slope, causing the mobility device to "perch", and will also decrease the effort needed to cross the street. Tactile

application for the blind and visually impaired will be necessary. In re-construction each site will need to be evaluated on its own merits, in light of what is contained underneath the median/island area.)

k) That redevelopment of an area should include plans to retrofit sidewalks to provide safe pedestrian access as part of the overall development plan.

Ramps where there are crosswalk markings

l) That if space permits, there be two ramps at each corner. Where space permits only one ramp, the length of the ramp will be dependent on the distance of the pavement markings from the corner. If the markings are less than 4 feet from the corner, the ramp will extend around the corner to a maximum of 8 feet to enable a person to travel in a straight line without travelling outside of the crosswalk markings.

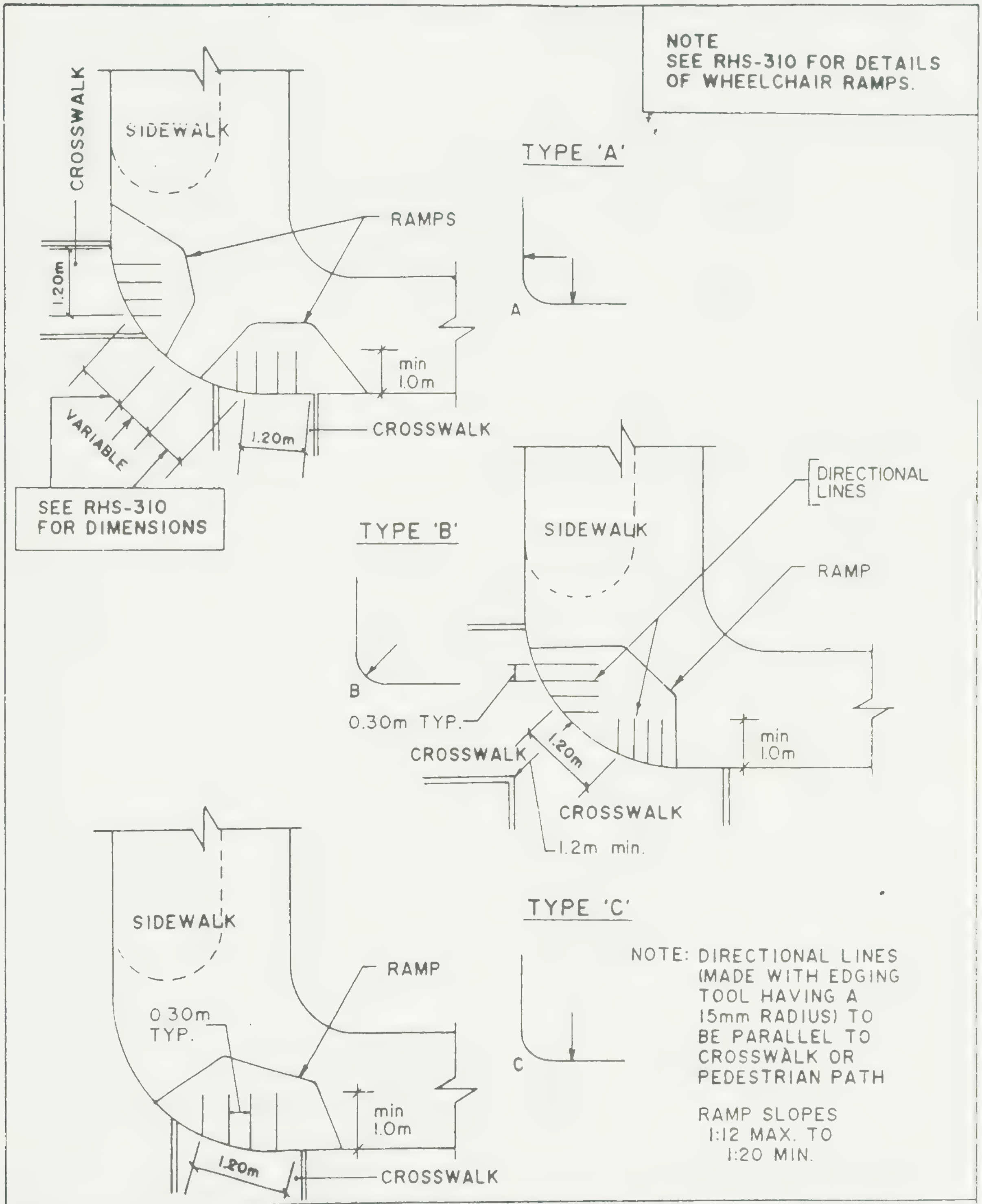
Ramps where there are no crosswalk markings

m) That where there are no crosswalks markings, the crosswalk area is considered to be an extension of the sidewalk.

n) That where space permits, there be two wheelchair ramps at each corner and they be in line with the sidewalk. Where there is one ramp, it extend four feet from the corner in either direction. This will ensure that a person using a mobility device will not have to travel out into the intersection to access the ramp at right angles.

Ramps where there are no sidewalks

o) That in the event that mountable curbs are installed at driveways, a retro-fit curb cut or modification be considered, upon request, by the municipality.



NOTE
SEE RHS-310 FOR DETAILS
OF WHEELCHAIR RAMPS.

NOTE: DIRECTIONAL LINES (MADE WITH EDGING TOOL HAVING A 15mm RADIUS) TO BE PARALLEL TO CROSSWALK OR PEDESTRIAN PATH

RAMP SLOPES
1:12 MAX. TO
1:20 MIN.

THE REGIONAL MUNICIPALITY OF HAMILTON - WENTWORTH
DEPARTMENT OF ENGINEERING

DIRECTOR

#3

REVISION

WHEELCHAIR RAMP LOCATIONS

DATE	SCALE	APPROVED
APR. 2,1990	N.T.S.	Ted Gill COMMISSIONER OF ENGINEERING

DRAWING NO. RHS - 312

Section II: Curb Ramp Survey

Introduction

The Ramping Subcommittee recommended that a survey be undertaken which would form the basis of a plan to systematically upgrade ramping within the Region. The Survey Project was approved by Regional Council in January 1990. Funding was made available from the Department of Social Services, Regional Municipality of Hamilton-Wentworth. The Ramping Subcommittee of the Regional Advisory Committee for the Physically Disabled assumed responsibility for overseeing the work of the Project.

Survey Objectives

1. To physically survey the Region and describe: a) where ramping exists, b) where existing ramping does not conform to minimum safety standards and should be retrofitted, and c) where ramping should exist.

2. To describe pedestrian pathways which are areas where there is a high density of disabled and elderly pedestrian traffic. Pathways include shopping facilities, health, social and recreational facilities, and workplaces. These high density pedestrian pathways will warrant attention with a view to improving these walkways for safe night time and year round travel.

3. To develop a plan that will set priorities and accelerate the process of sidewalk ramping and retrofitting.

Survey Work Procedures

The survey team went out to physically describe the curb ramp situation in the Regional Municipality of Hamilton-Wentworth. It became apparent that to accurately assess travel accessibility for wheelchair users throughout the Region, the survey team needed to describe the sidewalks and mid-block crossings as well as the curb ramps at intersections.

The survey area included all major streets, called pathways, in all six municipalities. The survey team consisted of three persons, two persons in wheelchairs (each working half-day shifts) and a third full-time survey member who is visually impaired.

It should be noted that the Field Survey did not assess curb ramps according to the new placement standards. The Field Survey based its evaluation of curb ramps on safety and useability to assess the need for retrofit. However, curb ramps were assessed on the basis of the new standards where new sidewalk construction was encountered.

Curb Ramp Evaluation

Street maps and symbols were used to record the state of curb ramps. Every corner at an intersection is described by one symbol. Curb ramp observations were based on the following criteria:

- The ramp is okay.

  These ramps are useable and safe. This does not mean they are up to the new curb ramp standards. For example, the new standards call for no level change between ramp and road, but for the evaluation of need to retrofit a curb ramp, a level change less than $^{1}/_{4}$-inch is considered acceptable for useability and safety. The correct placement of lines for visually impaired persons was not assessed.

- There is no curb ramp.

  This is equivalent to a dead end for the wheelchair or scooter user. Mid-block crosswalks with no ramps are included as well as corners, medians and islands.

- The change of level between the ramp and the roadway (a lip), is more than $^{1}/_{4}$-inch high.

  Both forward and reverse lips exist. Usually the ramp is higher than the roadway, resulting in a sudden drop as the roadway is entered. Sometimes the roadway is higher than the ramp, due to road resurfacing, thus a reverse lip. Lips on ramps are a dangerous and insurmountable 2-inches high in some cases. For wheelchair users a lip may make a ramp as inaccessible as if there were no ramp at all.

- The ramp is too steep.

  Negotiating these ramps is dangerous or difficult due to the grade. A steep ramp increases the likelihood of a wheelchair tipping over or rolling out of control into traffic.

- The ramp is poorly placed.

  This symbol is used when the wheelchair has to travel outside a crosswalk area to use the ramp or the ramp is so far away from the corner that cars parked on the street block access to the ramp. On heavily travelled streets it is dangerous for the wheelchair user to be lead into the traffic flow due to poor ramp placement.

- The ramp is both poorly placed and has a lip greater than $^{1}/_{4}$-inch.

- There is no sidewalk. In these areas wheelchairs must travel on the roadway.

Section III: Survey Findings

Curb Ramp Findings

The findings of the field survey indicate the extent to which the community is accessible and the amount of work required to make pedestrian pathways safe and accessible for disabled persons including blind and visually impaired persons.

Overall, approximately 6,481 field observations throughout the Region were recorded along critical pathways[1]. These include useable and safe ramps, existing ramps with problems, and corners and streetcrossings where there are no ramps. The observations are recorded by area municipality, and by District[2] in the City of Hamilton.

Across the Region, 3,933 existing ramps were assessed. Almost half of them (44%) were assessed to be useable and safe. The remaining were assessed to have one or more problems. The most prevalent problem by far is a lip problem accounting for 92.5% of all problems with curb ramps in the Region. This rate is consistent for all the area municipalities, and also within the City of Hamilton.

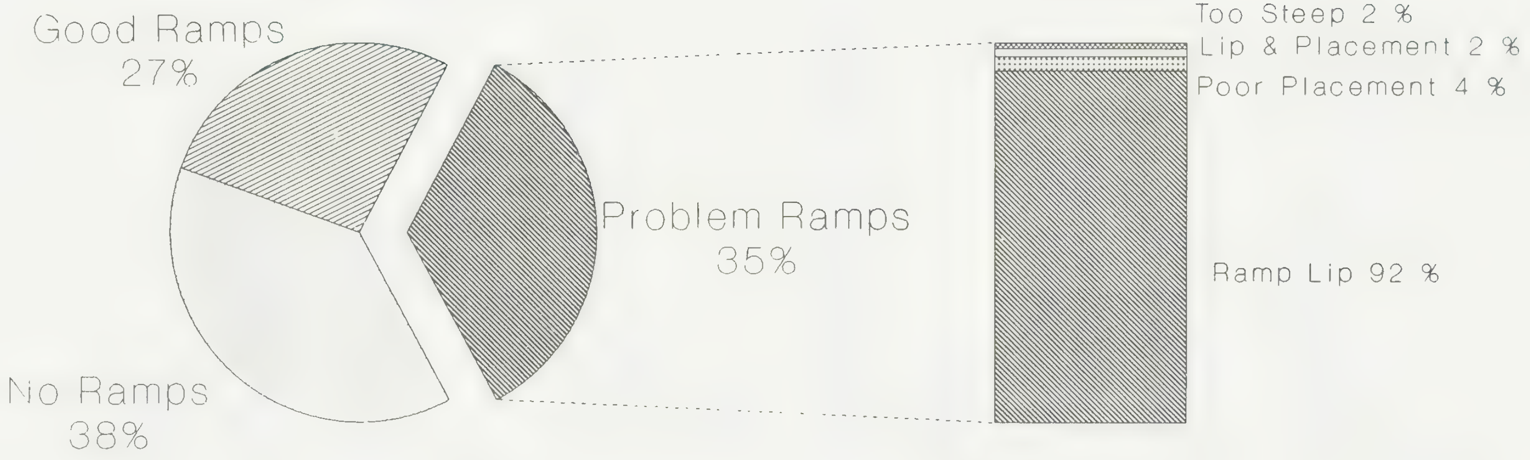
Approximately one third of all observations indicate no curb ramp along critical pathways. This means that either access or continuity of access is denied a disabled person along certain pathways in the community. Across the Region, there were 2,488 observations (38.4%) where there is no curb ramp. This rate is consistent in the larger area municipalities: Stoney Creek, 34.5% and City of Hamilton, 38.6%. Within the City of Hamilton, the prevalence of no curb ramps along critical pathways varies from a low of 30% in District 2 to a high of 46% in both Districts 3 and 5.

The survey findings are described in graphs and tables on pages 10 through 15.

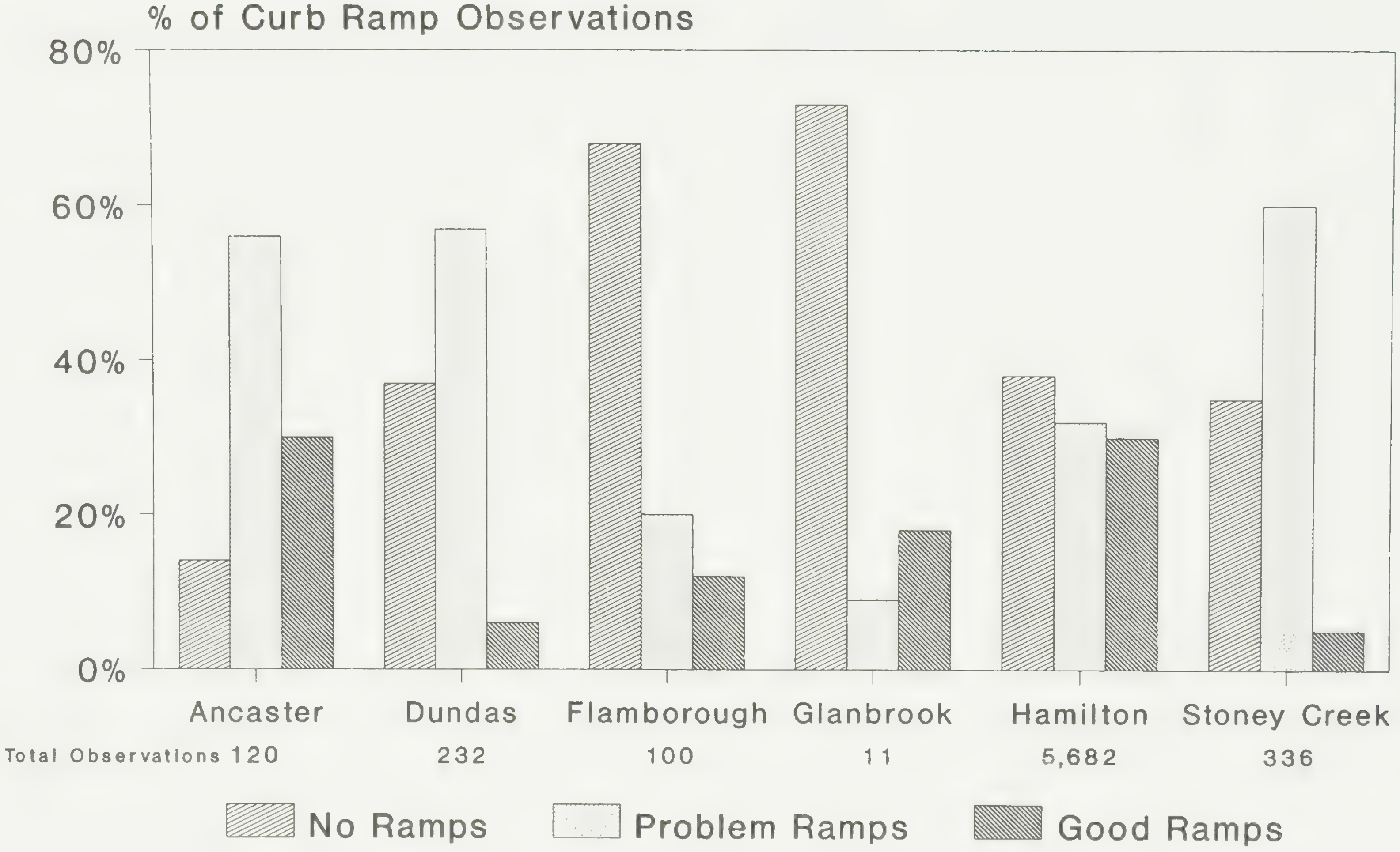
[1] Pathways are defined by major streets, and a high density of pedestrian traffic including disabled and elderly persons; pathways include shopping facilities, health, social and recreational facilities and workplaces.

[2] For a description of District boundaries, see page 12

GRAPH 1: CURB RAMP OBSERVATIONS
HAMILTON-WENTWORTH 1990



GRAPH 2: CURB RAMP OBSERVATIONS
BY AREA MUNICIPALITY 1990



Graph #3 and Table #1 describe curb ramp observations for the City of Hamilton by District. The district boundaries are described as follows:

- District #1
  Bounded on the North by the Bay, on the South by the foot of the Mountain, on the West by the City Limits and on the East by (but not including) James Street;

- District #2
  Bounded on the North by the Bay, on the South by the foot of the Mountain, on the West (and including) James Street and on the East by (but not including) Kenilworth Avenue;

- District #3
  Bounded on the North by the Bay, on the South by the foot of the Mountain, on the West by (and including) Kenilworth Avenue and on the East by the City Limits. District #3 also includes the Beach Strip;

- District #4
  Bounded on the East by the Mountain Brow, on the West by (but not including) Upper Wellington Street, on the North by the Mountain Brow and on the South by the City Limits. District #4 includes the Mountain Access roads in this district.

- District #5
  Bounded on the East by (and including) Upper Wellington Street, on the West by the City Limits, on the North by the Mountain Brow and on the South by the City Limits. District #5 also includes the Mountain Access roads in this district.

GRAPH 3: CURB RAMP OBSERVATIONS

HAMILTON 1990

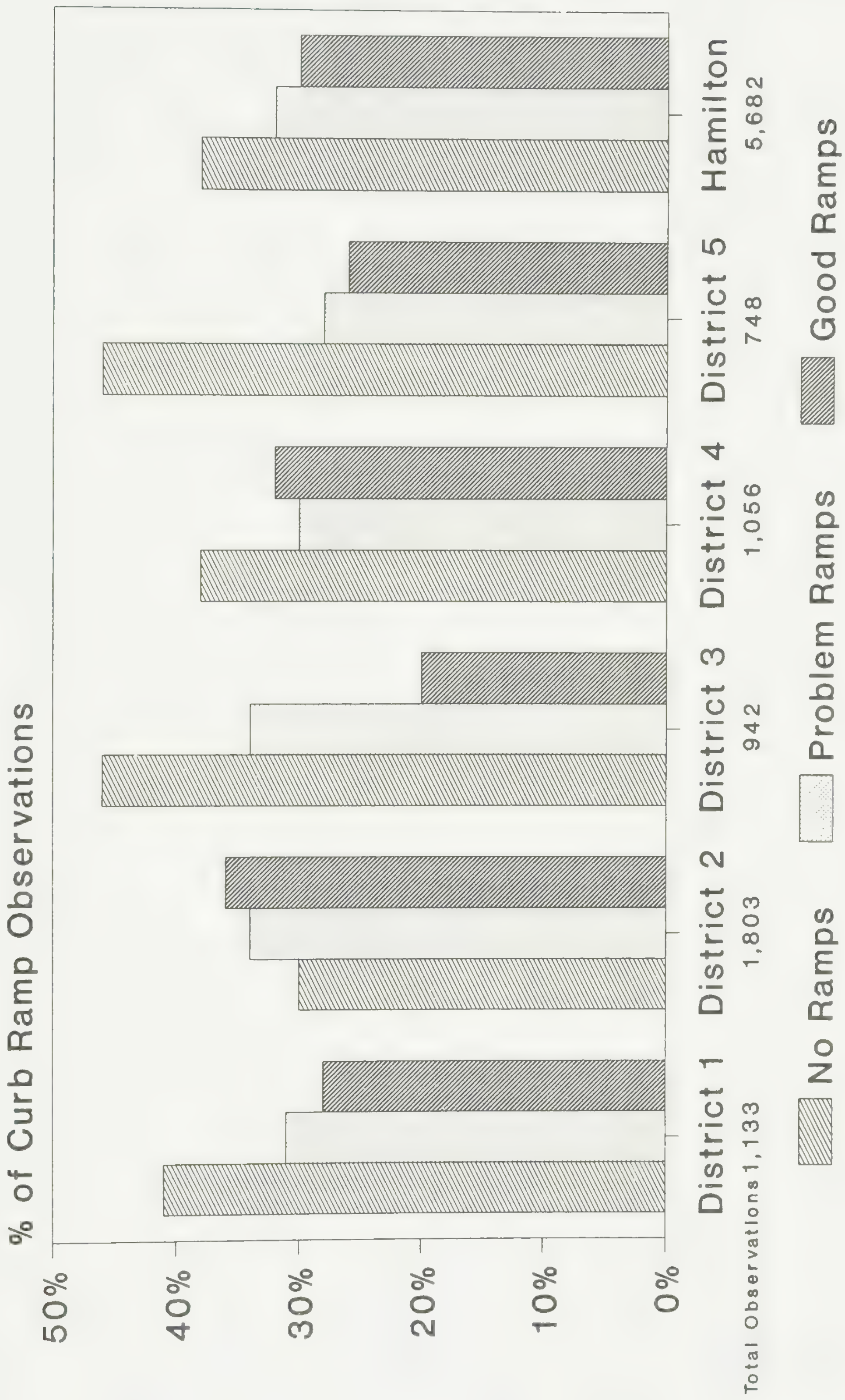


TABLE 1: CURB RAMP OBSERVATIONS, CITY OF HAMILTON, 1990

	DISTRICT 1	DISTRICT 2	DISTRICT 3	DISTRICT 4	DISTRICT 5	HAMILTON
SURVEY OBSERVATIONS	1133	1803	942	1056	748	5682
RAMPS SURVEYED	667	1256	506	656	403	3488
Ramp O.K.	315	644	189	337	193	1678
Ramps with Problems:						
-ramp with lip	307	550	395	309	202	1663
-poorly placed	22	36	16	2	5	81
-lip and poorly placed	16	16	3	2	1	38
-too steep	7	10	3	6	2	28
NO RAMPS OBSERVED	466	547	436	400	345	2194
No Ramp	419	511	394	358	316	1998
No Ramp at Crosswalk	47	36	42	42	29	196

TABLE 2: CURB RAMP OBSERVATIONS, REGION OF HAMILTON-WENTWORTH, 1990

	ANCASTER	DUNDAS	FLAMBOROUGH[1]	GLANBROOK[2]	HAMILTON	STONEY CREEK	REGION
SURVERY OBSERVATIONS	**120**	**232**	**100**	**11**	**5682**	**336**	**6481**
RAMPS SURVEYED	**103**	**147**	**32**	**3**	**3488**	**220**	**3993**
Ramp O.K.	36	15	12	2	1678	19	1762
Ramps with Problems:							
-ramp with lip	59	123	20	1	1663	198	2064
-poorly placed	3				81	1	85
-lip and poorly placed	4	2			38		44
-too steep	1	7			28	2	38
NO RAMPS OBSERVED	**17**	**85**	**68**	**8**	**2194**	**116**	**2488**
No Ramp	17	80	66	8	1998	106	2275
No Ramp at Crosswalk		5	2		196	10	213

[1] Area Surveyed-Waterdown

[2] Area Surveyed Includes Binbrook, and Mount Hope

Streetscape Findings

There were other observations made in the field that are important to the accommodation of the needs of pedestrians. Proper design and placement of curb ramps is not enough to keep people from using the roadways instead of sidewalks.

Observations are described for: a) sidewalks, b) obstacles on the sidewalks, c) railway tracks, d) mountable curbs, and e) services.

Sidewalks

The state of the sidewalks, conditions such as frost heaving, bumps, poor joints and cracking, deter access to vehicles for disabled persons. The jolts caused by poor sidewalk conditions cause a great deal of physical discomfort. A person pushing themselves in a manual wheelchair needs to exert a greater amount of energy on rough sidewalks. The result is that wheelchair users have no option but to travel along the roadway instead of the sidewalk even where adjacent corners are ramped. The frail elderly, small children, and persons using crutches, anyone not able to balance well or take high steps will tend to trip if sidewalks are not in good condition.

There are many places particularly in the outlying residential areas of the Region where sidewalks do not exist. Travelling along a roadway with no sidewalk is especially dangerous for someone in a wheelchair, as they cannot travel on an unpaved shoulder and they are lower to the ground and less visible to traffic.

Obstacles

Obstacles that block the right of way of pedestrian traffic on sidewalks and prevent wheelchairs from continuing are listed below. Whenever one of these obstacles is encountered, accessibility is denied and the wheelchair user is at a dead end. He or she can either depend on a passerby to remove the obstacle, turn around and go around the block, or go back to the previous intersection, cross the street, travel along the opposite sidewalk, and then recross the street. Obstacles in combination become much more obstructive than one alone, for example a cement garbage bin next to a hydro pole. With planning and co-operation all of these sidewalk obstacles could be eliminated.

Obstacles listed below are organized according to the constituency assumed to be responsible for their removal. First are obstacles that appear to be the responsibility of municipalities, second are the responsibility of commercial enterprise and third are the responsibility of private individuals.

Municipal

¤ cement garbage containers at a corner.
¤ post office mail and pick-up boxes on the sidewalk path.
¤ public drinking fountain in middle of curb ramp.
¤ utility poles positioned near centre of sidewalk.
¤ sidewalks starting and then ending and then starting again.

- garbage cans and lids lying on sidewalks on garbage day after pick-up.
- blue boxes lying on sidewalk after pick-up.
- benches blocking sidewalk.
- tree roots uplifting sidewalk.
- bus shelters elevated on block
- snow not cleared from sidewalks (not observed in the summer)

Commercial

- garbage containers from large apartments left for pick-up.
- newspaper bundles left on sidewalk before delivery person picks them up.
- newspaper vending machines on sidewalk path.
- debris from construction materials such as mud, bricks, stones, and wood spilling out onto sidewalks
- scaffolding on a building jutting out onto sidewalk.
- building steps encroaching on sidewalk.
- open house realty signs and any tent type advertisements placed on sidewalk in front of stores.
- garbage containers on mall sidewalk outside variety stores.
- construction pick-up trucks pulled off road onto sidewalk near construction site.
- trucks and buses pulling up over the sidewalk where the division separating the roadway and the pedestrian pathway is not clearly defined by a curb.

Private

- oversized trucks and cars in small driveways sticking out onto sidewalk.
- children's bicycles lying on mall sidewalks outside variety stores.
- shopping carts abandoned in middle of sidewalk.

Mountable Curbs

The survey crew found that areas in the Region with mountable curbs are not accessible to wheelchair users. A mountable curb is a barrier type curb with no vertical face; rather, the face of the curb is a roll over slope. The term, mountable, applies to cars and other road vehicles only. As currently constructed, these mountable curbs are insurmountable by wheelchairs. Where a sidewalk has been built next to the mountable curb, travel across a street is impossible and the joint between concrete mountable curb and concrete sidewalk often creates an uneven surface. Mountable curbs are too steep for mobility devices to pass because the footrest scrapes or lodges against the rolled slope of the curb and the effort needed to mount the curb is too great.

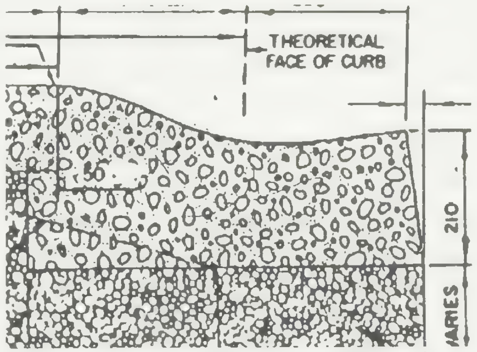


Figure -1- Cross section of mountable curb.

Railway Tracks

Railway tracks are a particular hazard for wheelchair users, and anyone using canes or crutches. Railway tracks are crossed by pedestrians in two situations; in the centre of an intersection crossing, and across a sidewalk as the railway line intersects a roadway. The major concern for wheelchair access is that there be no level changes between the steel rail and the adjacent ground.

Many of the railway crossings around the Region are extremely difficult to traverse in a wheelchair. Wheelchairs will tip if the level change between asphalt and rail is too great or will become trapped if the space between asphalt and rail is too great. The extreme jostling to a powered wheelchair at a rough railway crossing can shut down power and leave an electric wheelchair user stranded in the middle of a crosswalk or railway crossing.

Services

Other observations were made regarding services commonly found along streets that are sometimes inaccessible to persons using mobility devices. These include:

- manual traffic signals which are designed to be operated by persons crossing certain intersections. The buttons are difficult to push by someone with decreased strength or decreased manual dexterity and they are placed 5-inches too high to reach from a wheelchair. The pole supporting the switchbox is sometimes placed in a gravel or grassy location a foot or two off the sidewalk. A larger, lower, well positioned push plate would solve this problem.

- Canada Post supermailboxes which are too high to accept or retrieve mail from a wheelchair. The placement of the supermailbox can render them inaccessible due to the lack of concrete surface between the box and the sidewalk. Mountable curbs used in the neighbourhood make it impossible for wheelchairs to get onto the sidewalk housing the mailbox.

- Bell Canada telephone booths, specially designed to be accessible to wheelchairs are made totally inaccessible when the floor inside the booth is not at the same level as the sidewalk. The two-inch concrete base on the telephone booths are sometimes left sitting on a surface and not sunk into the ground. This problem can be eliminated through proper installation.

Section IV: Field Survey Outcome

As a result of the field survey, there are three principle outcomes:

- ¤ a data record
- ¤ access options for improved future access
- ¤ directions for future activities of the Ramping Subcommittee

Data Record

The data collected and recorded with symbols on maps is being transferred to two media; one a large wall size Hamilton-Wentworth Map, and the other a city sidewalk information database (Streets Inventory Database).

Map

The Regional map provides a readily accessible and easily understandable visual description of the curb ramp situation in all six municipalities in the Region. A colour coded legend and corresponding coloured dots describe the condition of a curb ramp at a specific corner, and any ramps that would be encountered along the sidewalk. The map can be used to show what route, if any, a person in a wheelchair or scooter could take from point A to point B. It indicates where ramps or improvements are needed to ensure the corners are accessible. The map also shows where there are no sidewalks on the routes the survey team followed. Since critical pathways were surveyed where sidewalks are more likely, the mapping of places where there are no sidewalks is obviously incomplete. This map also indicates how much of the Region was surveyed during 1990, and what areas are still not surveyed.

This visual description of curb ramps may be useful for educating interested persons about the curb ramp situation. These persons could be members of planning committees, politicians, Regional staff and anyone in the community who has a concern with access.

Database

The Streets Inventory Database file contains City of Hamilton information regarding the condition of sidewalks, amount of traffic flow, age of sidewalks etc. The data collected by the ramping survey team can be incorporated into this file. This will create a powerful tool for curb ramp information retrieval, information updates, changes and decision making. Quantitative information on curb ramps, as well as the numbers of ramps requiring specific improvement will be available immediately. Priorities for retro-fit decisions can be made by relating information on curb ramps to traffic flow and future roadway construction and utility cuts. The use of this database will simplify future survey data entry. It should be noted that the survey data for the other five municipalities is available on maps and not available as computer data in the summary report.

Options For Improved Future Access

Throughout the Region the survey team came across a variety of situations which provided both good and bad examples of wheelchair access. These might be of some value in assisting planners to choose the most accessible option in the future.

Mall Entry and Exit Points

Mall driveways built to require no sidewalk level change provide excellent accessibility. Automobile entrance and exit points at shopping malls and plazas are constructed in one of two ways. These driveways are either:

- depressed from the sidewalk, thereby necessitating a curb ramp in mid-block, or
- level with the sidewalk and cars travel down a driveway ramp to the roadway, just as they do in residential areas. This is the best option.

The survey crew found some malls where depressed driveways have no ramps and therefore the sidewalk is blocked to wheelchair users.

Uneven Sidewalks

Frost heaving in sections of sidewalks are common throughout the Region, particularly on the mountain. This problem is as equal an obstacle to a wheelchair user as lips on curb ramps. The survey team came across two types of repair for this problem. Most common is the application of asphalt fill to smooth out the sudden sidewalk level change. This creates numerous small ramps along the sidewalk but does somewhat improve access. A second method used is the scraping away of the uplifted concrete until the joints between sidewalk sections are level. The concrete scraping method provides better access as it creates a level path, but it destroys the top protective layer on the sidewalk concrete, thereby making it susceptible to deterioration.

The application of asphalt on raised sections of a sidewalk can result in suitable accessibility if workers doing the repairs are aware of slope and flush-joint concerns.

Natural Infills

It is interesting to note that where frost heaving between sidewalk sections is minimal, natural vegetation, such as moss and grass growing and filling in the cracks, provides a cushion and hence smooth access for wheelchairs.

Another natural aid to access at curb ramps happens when hard packed dirt fills up the level change (lips), between the road and the sidewalk. This gives a very accessible, flush curb ramp if water, wind and road cleaning does not remove the dirt infill.

Railway Tracks

As previously stated, railway tracks are a hazard both in the centre of an intersection and across the sidewalk. However, the survey team came across two pedestrian railway crossings with improved access. At these locations, the steel rails are adjacent to a very

road grade. This provides the best level for wheelchair and scooter access. Examples of this railway crossing treatment can be found on King Street east of Gage, and on both the roadway and the sidewalk on Barton Street near Belmont.

Yellow Paint on Curb Cuts

The town of Dundas paints some of their curb cut corners with a strip of yellow paint. This improves the access for visually impaired persons by marking the boundary between road and sidewalk with an easy to see colour contrast.

Islands and Medians

Throughout the Region there are numerous busy intersections where islands and medians must be negotiated. They are in one of three states: raised with no access, ramped, or cut-through level with the street. The cut-through option is the most accessible.

Accomplishments to Date

The work of the Ramping Subcommittee has achieved its objectives for Stage 1 of a two year project mandate. The Committee set out to address the issues of accessability related to curb ramping and accomplished the following:

- identified obstacles that disabled persons, including blind and visually impaired persons, seniors and other citizens face in the community
- developed design and placement standards for curb ramps in the Region
- surveyed the Region to describe a) where ramping exists, b) where existing ramping does not conform to minimum safety standards and should be retrofitted, and c) where ramping should exist
- assessed the application of the design and placement standards
- recorded the findings of the survey activity on a wall size Hamilton-Wentworth map
- incorporated the survey data in a Regional Database file (ongoing)
- proposed options for improved wheelchair access.

Most importantly, the achievements of the Ramping Subcommittee are indicative of the importance of lateral co-operation among consumers and representatives of local government. More specifically, communication and skills sharing among the Departments of Engineering and Social Services, the Traffic Department (City of Hamilton), Community Development, the CNIB, representatives of local area municipalities and consumers, have served to make the work of the Ramping Subcommittee effective. It is the intention of the Committee to maintain the integrity of ongoing initiatives in the same spirit of co-operation.

Future Directions

The survey undertaken during the summer of 1990 forms the basis of a plan to systematically upgrade streetscape accessability, and more specifically curb ramping, in the Region. The fulfilment of this plan will require various activities.

It is recommended that the following activities set the agenda for Stage 2 of the work of the Subcommittee:

- Develop a plan that will set priorities and accelerate the process of sidewalk ramping; develop the plan in conjunction with other streetscape accessability design standards.

- Develop workshops to orient and educate staff, contractors and consumers alike, so that the design and placement standards are well understood, appreciated and applied correctly and consistently.

- Develop a mechanism to enhance co-ordination among the stakeholders and key players in the pursuit of accessible communities, including Community Development, Traffic Department, Engineering, Planning, contractors and Public Works to ensure ongoing integration of standards for accessability in the built environment.

- Develop a mechanism that enables the Department of Engineering to maintain and update curb ramp information on the Streets Inventory Database.

- Develop a plan to continue the survey of curb ramps in residential areas during the summer of 1991, and ensure the plan facilitates data entry.

Conclusion

The Ramping Subcommittee of the Regional Advisory Committee for the Physically Disabled has embarked on a process instrumental in developing a systematic plan for ensuring complete ramping throughout the Region.

The underlying theme is good design for disabled persons is good design for everyone in the community.

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